

NOTES ON A KILLER WHALE (GENUS ORCINUS) FROM THE COAST OF MAINE.

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The number of species of killer whales which inhabit the North Atlantic is uncertain. Lilljeborg, Eschricht, Van Beneden, Gray, Lütken, and other cetologists have endeavored to solve the question, but have been unable to do so, owing chiefly, it would appear, to lack of sufficient material. Eschricht thought it possible to distinguish three species in European waters, and Reinhardt appears to have concurred in that view. Gray considered that two European species could be distinguished by the skulls. Van Beneden remarked in 1889:

We not only believe that it is necessary to refer all these killers of the European seas to one and the same species, but we believe it possible to add also the killers of the Pacific and those of our antipodes.^a

Lütken in 1887 summed up his study of the genus as follows:

As regards the northern waters, I can only recognize two [species], and one of these, which bears the name of *eschrichtii*, still has need to be studied with new material.^b

It has been known from a very early date that killers frequent the Atlantic coast of North America, but very little attention has been paid to them by American zoölogists, owing no doubt in part to the scarcity of opportunities to examine specimens. At all events, nothing of importance regarding these cetaceans is to be found in American zoölogical literature. I omitted them from my Revision of the Delphinidæ, as, on account of insufficient material, I feared to increase rather than to lessen the uncertainty regarding the real number of existing species.

In view of the present condition of the subject, it has seemed to me

^a P. J. Van Beneden, *Hist. nat. des Cétacés des mers d'Europe*, 1889, p. 43.

^b C. F. Lütken, *Krit. Studier over nogle Tandhvaler af Slægterne Tursiops, Orca og Lagenorhynchus*. Videns. Selsk. Skr., 6. Række, nat. og math. Afd., 4, art. 6, 1887, p. 394.

desirable to publish reproductions of two admirable photographs of a killer stranded at Eastport, Maine, in March, 1902. These photographs were obtained by the National Museum from Mr. William S. Hume, through Dr. Richard Rathbun.

My attention was first attracted to the animal by the following item which appeared in the New York *Sun* newspaper of March 3, 1902:

EASTPORT, MAINE, *March 2*.—Two large finback whales found their way into a small cove in the western part of the city on Thursday and will probably soon be killed. The whales have been seen in different parts of Passamaquoddy Bay for four weeks, and had made their way a few days ago up the Concook River, where the water is shallow.

A small stream flows out from the river to the east, passing under the toll bridge which connects this island city with the mainland, 4 miles away. It was under this bridge that the two whales made their way into the small cove, which is inclosed on the other entrance by the three wooden bridges of the Washington County Railroad.

At low tide the cove is shallow and there is hardly room for the whales to move about. The cove is within a half-mile of the Passamaquoddy Indian settlement, where there are 400 Indians.

Upon writing to Mr. Hume, I was surprised to learn that the whales were not finbacks, but killers. Later Mr. Hume forwarded the two photographs of one of the specimens, which are published herewith, and the following measurements and memoranda:

	Ft.	in.
Total length of whale, straight.....	25	4
Vertical height of dorsal fin.....	5	7
Length of base of dorsal fin.....	3	0
Length of pectoral	3	0
Breadth of pectoral	3	0
Spread of flukes.....	9	2

General color above, black; below, white. Color of pectorals above, black; below, white. Color of flukes above, black; below, white. Sex, male.

Much to my regret the carcasses of these fine specimens were towed out to sea before it was known that the skeletons and casts of the exterior would be of interest to science.

European killers have been figured many times, the best drawings being those published by Schlegel,^a Lütken,^b and Van Beneden.^c

Lütken's figure agrees with the photograph of the Eastport specimen with the greatest exactness, except that the grayish mark on the back, posterior to the dorsal fin, is not observable in the latter. As this mark is probably rather indistinct, it may have been present in the Eastport specimen, but is not visible in the photographs on account

^a H. Schlegel, Abhandl. aus dem Gebiete der Zoologie und Vergleich. Anatomie, 1841, pl. vii. Female, about 14 feet long. Wyk op Zee, Holland, 1841.

^b C. F. Lütken, Vidensk. Selsk. Skv., 6 Række, nat. og math. Afb., 4, art. 6, 1887, pl. 1. Female, about 16 feet long. Limfiord, Norway. 1872.

^c P. J. Van Beneden, Mem. Acad. R. Belgique, XLIII, 1879, pl. 1. Young, about 6 feet 8 inches long. Ostende, Belgium. 1843 or 1844.

of the manner in which the light strikes the back.^a Schlegel's figure also agrees admirably, but the lower jaw is represented as longer, and there are slight differences in the shape of the postocular spot, and the boundary between the white of the lower surfaces and the black of the upper surfaces. The dorsal mark is present in Schlegel's figure, but is colored purple.

Van Beneden's figure of a young individual is remarkable in that the lower surfaces are bright yellow, instead of white. This appears from other indications to be a character of immaturity. The post-ocular mark is very large and has a serrated anterior margin.^b

There appears to be no reasonable doubt that Lütken's figure and the Eastport photograph represent one and the same species, namely, *Orcinus orca* (Linnaeus), the type-species of the genus. It must be confessed, however, that a comparison of measurements of various North Atlantic specimens only leads to confusion. The different specimens show no decided tendency to group themselves into separate species, or to agree with one another in proportions. Doubtless many of the discrepancies are due to faulty measurements or differences in the methods of measuring, but my experience with whalebone whales leads me to believe that this may not be taken for granted. It is quite likely that there is a considerable amount of individual variation in proportions among these animals, the extent of which can not, however, be ascertained without the examination of a much larger number of specimens than has been available hitherto. The measurements above referred to, reduced in each case to percentages of the total length, are shown in the table on the following page.

While any opinion regarding the species of *Orcinus* can have little weight at present, such data as are available appear to indicate that a single species occupies the North and South Atlantic, a very distinct form the South Pacific (coast of Chile, etc.), and possibly a third species the North Pacific. The Faroe species, generally known as *O. eschrichtii*, appears to me to have but slight claims to recognition at present.

^aThese two photographs illustrate in an admirable manner how errors are likely to arise from the examination of a single picture of this kind. From Plate VIII it would be imagined that the posterior end of the upper lip and a spot in front of the eye were white and also that the white of the postocular spot joined that of the throat, but on comparing Plate VII it is seen that these apparent extensions of the white are due to reflections.

^bSee also the figure published by Guldberg and Nansen in *Bergens Mus. Skrift.*, V, 1894, pl. v, fig. 2.

	Eastport, Maine, 1903, male.	Benzon, Nor- way, 1861, male.	Vannes, France, 1876, male, young.	Lynn, Eng- land, 1836, male.	Lormont, France, 1876, male, young.	Greenland, 1844, female.	Wyk op Zee, Holland, 1841, female.	Aarhuis, Den- mark, 1855 female, young.	Bohusan, Swe- den, 1871, female, young.
Total length	a 25' 4"	b 21' 4"	a 20' 3"	a 19' 0"	a 10' 8"	b 17' 6"	c 16' 3"	b 13' 0"	a 11' 7"
Vertical height of dorsal	<i>Per cent.</i> 22.0	<i>Per cent.</i> 18.7	<i>Per cent.</i> 14.8	<i>Per cent.</i> 21.0	<i>Per cent.</i> 11.4	<i>Per cent.</i> 9.8	<i>Per cent.</i> 11.8	<i>Per cent.</i> 11.5	<i>Per cent.</i> 8.4
Length of pectoral	11.8	18.3	15.8	21.0	13.7	10.9	12.3	14.4	11.4
Greatest breadth of pectoral	11.8	15.0	8.0	14.1	8.2	6.0	8.7	[7.0]	5.7
Breadth of flukes	36.2	29.3	21.8	37.5	24.8	18.6	28.2	27.0	22.5
		(Eschricht.)	(Duhamel.)	(+ M.)	(Souverbie.)	(Eschricht.)	(Schlegel.)	(Eschricht.)	(Friesen.)

a English measure.

b Danish measure.

c Rheinland measure.